

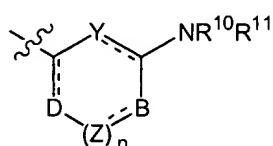
I

or a pharmaceutically acceptable salt or prodrug thereof,

wherein at least one of R<sup>1</sup> or R<sup>3</sup> is a pyrimidine;

R<sup>2</sup>, R<sup>4</sup> and R<sup>5</sup> are each independently selected from the group consisting of

hydrogen, halogen, alkyl, haloalkyl, alkoxy, cyano, nitro, cycloalkyl, carboxaldehyde, and a group of formula II defined as



II

subject to the proviso that one or more than one of R<sup>1</sup> or R<sup>3</sup> is a group of

formula II as defined above;

wherein D, B, Y and Z at each occurrence are independently selected from the

group consisting of -CR<sup>6</sup>=, -CR<sup>7</sup>R<sup>8</sup>-, -C(O)-, -O-, -SO<sub>2</sub>-, -S-, -N=, and

-NR<sup>9</sup>-;

n is an integer of zero to three;

R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup> and R<sup>9</sup>, at each occurrence, are each independently selected from the

group consisting of hydrogen, alkyl, carboxy, hydroxyalkyl,

alkylaminocarbonylalkyl, dialkylaminocarbonylalkyl and carboxyalkyl; and

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$R^{10}$  and  $R^{11}$  are each independently selected from the group consisting of hydrogen, alkyl, cycloalkyl, alkoxyalkyl, alkoxy carbonylalkyl, carboxyalkyl, hydroxyalkyl, heterocyclyl, heterocyclylalkyl and heterocyclylamino; or  $R^{10}$  and  $R^{11}$  are taken together with N to form a three to seven membered unsubstituted heterocyclyl ring, or a three to seven membered substituted heterocyclyl ring, substituted with one or more than one substituent  $R^{13}$ , wherein  $R^{13}$ , at each occurrence is independently selected from the group consisting of alkyl, alkylene, alkoxy, alkoxyalkyl, cycloalkyl, aryl, heterocyclyl, heterocyclylalkyl, heterocyclylcarbonyl, heterocyclylalkylaminocarbonyl, hydroxy, hydroxyalkyl, hydroxyalkoxyalkyl, carboxy, carboxyalkyl, carboxycarbonyl, carboxaldehyde, alkoxy carbonyl, arylalkoxycarbonyl, aminoalkyl, aminoalkanoyl, aminocarbonyl, carboxamido, alkoxy carbonylalkyl, carboxamidoalkyl, cyano, tetrazolyl, alkanoyl, hydroxyalkanoyl, alkanoyloxy, alkanoylamino, alkanoyloxyalkyl, alkanoylaminoalkyl, sulfonate, alkylsulfonyl, alkylsulfonylaminocarbonyl, arylsulfonylaminocarbonyl and heterocyclylsulfonylaminocarbonyl; wherein A is an unsubstituted aryl group, an unsubstituted heterocyclyl group, a substituted aryl group, or a substituted heterocyclyl group, substituted with one or more than one substituent  $R^{12}$ , wherein  $R^{12}$ , at each occurrence, is independently selected from the group consisting of halogen, alkyl, aryl, haloalkyl, hydroxy, alkoxy, alkoxyalkyl, alkoxy carbonyl, alkoxyalkoxy, hydroxyalkyl, aminoalkyl, aminocarbonyl, alkyl(alkoxy carbonylalkyl)

aminoalkyl, heterocyclyl, heterocyclalkyl, carboxaldehyde, carboxaldehyde hydrazone, carboxamido, alkoxy carbonylalkyl, carboxy, carboxyalkyl, carboxyalkoxy, hydroxyalkylaminocarbonyl, cyano, amino, heterocyclalkylamino, carboxythioalkoxy, carboxycycloalkoxy, thioalkoxy, carboxyalkylamino, trans-cinnamyl and heterocyclalkylaminocarbonyl; and

wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup> and R<sup>13</sup> are unsubstituted or substituted with one or more than one electron donating or electron withdrawing group

wherein the heterocyclyl is chosen from 4-, 5-, 6- and 7-membered rings

containing 1-3 heteroatoms independently selected from nitrogen, oxygen and sulfur; the 4- and 5-membered rings have zero to two double bonds and the 6- and 7-membered rings have zero to three double bonds, the heterocycle being optionally substituted with alkyl, halogen, hydroxy or alkoxy substituents,

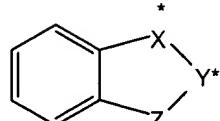
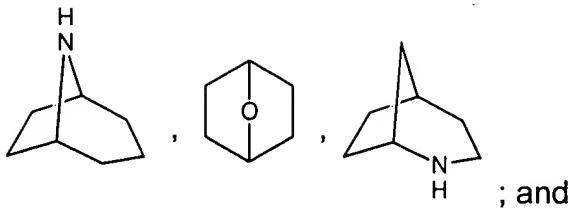
further wherein the heterocyclyl optionally comprises a group chosen from:

(i) bicyclic, tricyclic and tetracyclic groups in which any of the above heterocyclic rings is fused to one or two rings independently selected from an aryl ring, a cyclohexane ring, a cyclohexene ring, a cyclopentane ring, a cyclopentene ring, and another monocyclic heterocyclic ring;

(ii) bridged bicyclic groups where a monocyclic heterocyclic group is bridged by an alkylene group optionally selected from

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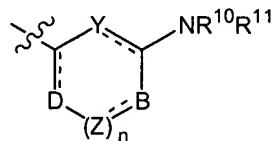
(iii) compounds of the formula

where  $X^*$  and  $Z^*$  are

independently selected from  $-\text{CH}_2-$ ,  $-\text{CH}_2\text{NH}-$ ,  $-\text{CH}_2\text{O}-$ ,  $-\text{NH}-$  and  $-\text{O}-$ , with the proviso that at least one of  $X^*$  and  $Z^*$  is not  $-\text{CH}_2-$ , and  $Y^*$  is selected from  $-\text{C}(\text{O})-$  and  $-(\text{C}(\text{R}'')_2)_v-$ , where  $\text{R}''$  is hydrogen or alkyl of one to four carbons, and  $v$  is 1-3.

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2. (Twice Amended) A compound according to claim 1 wherein  $\text{R}^3$  is the group of formula II



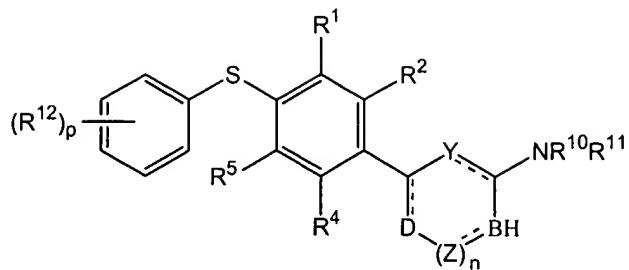
II

wherein  $\text{R}^{10}$ ,  $\text{R}^{11}$ ,  $\text{D}$ ,  $\text{B}$ ,  $\text{Y}$ ,  $\text{Z}$ , and  $n$  are defined as in claim 1; and  $\text{R}^1$  is defined as in claim 1 with the proviso that if  $\text{R}^3$  does not define a pyrimidine, then  $\text{R}^1$  is a pyrimidine.

3. (Twice Amended) A compound according to claim 1 of formula III

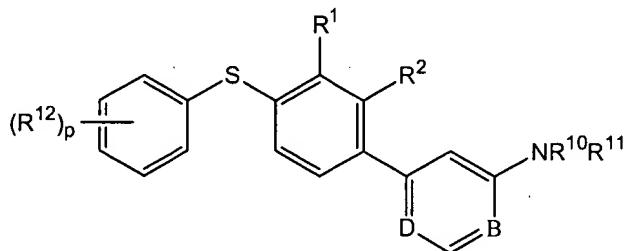
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wherein  $R^1$ ,  $R^2$ ,  $R^4$ ,  $R^5$ ,  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$ , D, B, Y, Z, and n are defined as in claim 1;  
and p is an integer of zero to five.

5. (Twice Amended) A compound according to claim 1 of formula IV



wherein D and B are each independently selected from the group consisting of

$-N=$  and  $-CR^6=$ ;

$R^1$  is selected from the group consisting of hydrogen, halogen and haloalkyl, with

the proviso that if  $R^3$  does not define a pyrimidine, then  $R^1$  is a pyrimidine;

$R^2$  is selected from the group consisting of hydrogen, halogen and haloalkyl;

$R^{10}$  and  $R^{11}$  are defined as in claim 1;

$R^{12}$ , at each occurrence, is independently selected from the group consisting of

halogen, alkyl, haloalkyl, alkoxy, carboxyalkoxy, carboxyalkyl and

heterocyclyl, wherein  $R^{12}$  is unsubstituted or substituted with at least one

electron donating group or electron withdrawing group; and

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β2

p is an integer of zero to five.

7. (Twice Amended) A compound according to claim 1, selected from the group consisting of 1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidine-3-carboxylic acid, 4-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-6-(3-(2*H*-tetrazol-5-yl)-piperidin-1-yl)-pyrimidine, 4-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-6-(4-(2*H*-tetrazol-5-yl)-piperidin-1-yl)-pyrimidine, (1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidin-3-yl)-methanol, 2-(1-(6-(4-(2-isopropylphenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidin-4-yl)-ethanol, 4-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-morpholine, 1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidin-4-ol, 4-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-2,5-dimethyl-morpholine, 1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidine-3-carboxylic acid amide, 1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidine-4-carboxylic acid amide, N-Ethyl-N-1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-pyrrolidin-3-yl)-acetamide, 1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidine-3-carboxylic acid ethyl ester, 1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidine-4-carboxylic acid ethyl ester, 4-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperazine-1-carboxylic acid ethyl ester, 4-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperazin-1-yl-acetic acid ethyl ester, (3-imidazol-1-yl-propyl)-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-amine, 1-(6-(4-(2-isopropyl-

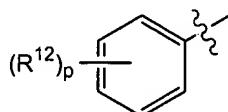
β3

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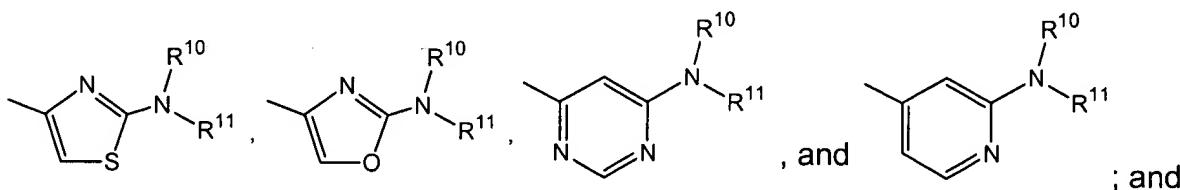
phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidine-4-carboxylic acid, 4-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidine-3-carboxylic acid, 1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidine-3-carboxylic acid diethyl amide, N-1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-pyrrolidin-3-yl)-acetamide, 4-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-6-(2-methoxymethyl-pyrrolidin-1-yl)-pyrimidine, 1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-pyrrolidin-3-ol, (1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-pyrrolidin-3-yl)-carbamic acid *tert*-butyl ester, isopropyl-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-methyl amine, and ethyl-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-methyl-amine.

12. (Amended) A compound according to claim 1 wherein A is an unsubstituted or substituted aryl group of the formula



wherein R<sup>12</sup> is defined as in claim 1; and p is an integer of 0 to 5.

14. (Amended) A compound according to claim 1 wherein R<sup>3</sup> is selected from the group consisting of



R<sup>1</sup> is defined as in claim 1 with the proviso that if R<sup>3</sup> does not define a pyrimidine, then R<sup>1</sup> is a pyrimidine.

17. (Amended) A compound according to claim 1 wherein

$R^1$  is selected from the group consisting of hydrogen, halogen, alkyl and nitro,

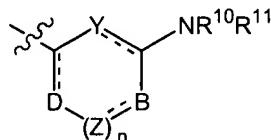
with the proviso that if  $R^3$  does not define a pyrimidine, then  $R^1$  is a pyrimidine;

$R^2$  is selected from the group consisting of hydrogen, halogen, alkyl, and nitro;

$R^4$  and  $R^5$  are each independently selected from the group consisting of hydrogen and alkyl; and

*B6*

$R^3$  is



wherein

D is  $-CR^6=$  or  $-N=$ ,

B is  $-S-$ ,  $-O-$ ,  $-CR^6=$  or  $-N=$ ,

Y is  $-CR^6=$  or  $-N=$ ,

Z is  $-CR^6=$  or  $-N=$ ; and

n is zero or one

18. (Amended) A compound according to claim 1 wherein

$R^1$  and  $R^2$  are each independently selected from the group consisting of

hydrogen, halogen, and haloalkyl;

$R^3$  is a pyrimidine; and

$R^4$  and  $R^5$  are each independently hydrogen.

19. (Amended) A compound according to claim 1 wherein

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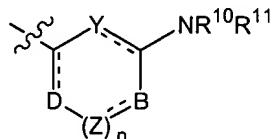
$R^1$  is selected from the group consisting of hydrogen, halogen and haloalkyl, with

the proviso that if  $R^3$  does not define a pyrimidine, then  $R^1$  is a pyrimidine;

$R^2$  is selected from the group consisting of hydrogen, halogen, and haloalkyl;

$R^4$  and  $R^5$  are each independently hydrogen; and

$R^3$  is



wherein

$\beta 6$   
D is  $-CR^6=$  or  $-N=$ ,

B is  $-S-$ ,  $-O-$ ,  $-CR^6=$  or  $-N=$ ,

Y is  $-CR^6=$  or  $-N=$ ,

Z is  $-CR^6=$  or  $-N=$ ; and

n is zero or one.

20. (Amended) A compound according to claim 1 wherein

$R^1$  is selected from the group consisting of hydrogen, halogen and haloalkyl, with

the proviso that if  $R^3$  does not define a pyrimidine, then  $R^1$  is a pyrimidine;

$R^2$  is selected from the group consisting of hydrogen, chloro, and trifluoromethyl;

$R^4$  and  $R^5$  are each independently hydrogen; and

$R^3$  is selected from the group consisting of

